

A CONTRIBUTION TO THE STUDY OF THE *ORCHIDACEÆ* OF THE CÔTE D'IVOIRE

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SUMMARY: Four new species of *Bulbophyllum* Thou. from the Côte d'Ivoire are described. A list is given of the new records of *Orchidaceæ* from the Côte d'Ivoire since the publication of the 2nd edition of F.W.T.A. (1968). An up-to-date list of all Orchid species recorded from the Côte d'Ivoire is provided in the appendix.

RÉSUMÉ. — Quatre nouvelles espèces de *Bulbophyllum* Thou. provenant de Côte d'Ivoire sont décrites. Une liste des nouvelles découvertes d'Orchidées de Côte d'Ivoire depuis la publication de la deuxième édition de F.W.T.A. (1968) est donnée. Une liste de toutes les espèces d'Orchidées de Côte d'Ivoire est donnée en appendice.

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The Côte d'Ivoire is included in that part of West Africa covered by the "Flora of West Tropical Africa" ed. 2 (1968). 145 species in 40 genera are recorded by SUMMERHAYES from the Côte d'Ivoire in the account of the *Orchidaceæ* in this Flora. However, at the time of compilation, specimens from this area were few and the recent collections of L. AKÉ ASSI, the botanists of O.R.S.T.O.M. and one of the authors (PEREZ-VERA) have increased the number of recorded species to 211 (an increase of over 30 %) in 45 genera.

The south west of the Côte d'Ivoire is little known botanically and still contains large areas of virgin rain forest including the extensive Forêt de Taï. One of us (PEREZ-VERA) has lived for 18 years at Daloa and has collected extensively in the south west region (for main collecting localities see figure 1). Most keys rely upon floral characters to distinguish Orchids so PEREZ-VERA has grown at Daloa many of those Orchids which were not flowering when collected. In this way, many species have been indentified from little known and seldom visited regions.

The aim of this paper is to provide an up-to-date account of the Orchid flora of the Côte d'Ivoire. Four species of *Bulbophyllum* Thou. are described for first time and a list is provided of those species which have been recorded for the first time in the Côte d'Ivoire since the publication of the second edition of F.W.T.A. in 1968. Finally, a provisional check list of the Orchids of the country has been given in the appendix.

Bulbophyllum daloaense Cribb & Perez-Vera, *sp. nov.* Pl. 2, p. 205.

B. filiformi Kraenzl. affine a quo rhachidi pubescenti, valde brevior, foliis minoribus, bracteis floralibus manifestis et pseudobulbis minoribus conicis differt necnon *B. rhizophora* Lindl. floribus majoribus, inflorescentia longiore pseudobulbisque valde distantibus differt.

Herba epiphytica; rhizoma repens, teres, 2-3 mm diametro, radices numerosas, flexuosas, ramosas e basi pseudobulborum emittens. Pseudobulbi per spatia 1.5-2.5 cm distantes, erecti, 4-angulati, ovoidei vel conici, 1.5 cm alti, 0.8-1 cm lati, lutei, biphylli. Folia erecta, elliptica vel oblonga, 2-3 cm longa, 0.7-1.2 cm lata, saturate viridia, apice in lobos 2 æquales, rotundos fixo, basi in petiolum brevem, ca. 1 mm longum, angustata. Inflorescentia e basi pseudobulbi exorta, suberecta, arcuata, teres, quam folia longior, usque ad 22 cm longa; pedunculus brevissimus, bracteis 2-4, scariosis, quam internodia brevioribus, 2-3 cm longis, velatus; rhachis teres, pilis brevibus purpureis oblecta, usque ad 20 cm longa; bracteæ florales distichæ, patentes, deltoideæ apiculatæ, 4 mm longæ, 3 mm latæ, membranaceæ, stramineæ, parte anteriore leviter pubescentes. Flores quam bracteæ longiores, purpurei et lutei. Sepalum intermedium leviter incurvatum, carnosum, anguste triangulare, apice acutum, 2.6 mm longum, 1 mm latum, extus pubescentia brevi dense ornatum; sepala lateralia deltoidea, erecta, apiculata, 2.7 mm longa, 2 mm lata, purpurea sed ad basin lutea, extus pubescentia ornata. Petala linearia, reflexa, 2.5 mm longa, 0.3 mm lata, purpurea, apice rotundata. Labellum carnosum, triangulare, glabrum, integrum, recurvatum, obtusum, 2 mm longum, basi 1.5 mm latum, purpureum, intus carinatum, basi depressione albo transversali ornatum. Columna 2 mm alta, distincte alata, apice manifeste tuberculata, steldia minuta; anthera galeiformis, purpurea, marginibus albis et centro papilloso notato; pollinia 2 ceracea.

TYPE : Perez-Vera 270, Route de Soubré à Buyo, Côte d'Ivoire (holo-, K; iso-, P, Daloa).
OTHER SPECIMEN : Perez-Vera 270 B, Forêt de Tai, Côte d'Ivoire (ABI, K, P, UCJ, Daloa).

B. daloaense may be distinguished by its gracefully arching inflorescence which is much longer than the leaves. In F.W.T.A. it keys out near *B. filiforme* but it has a shorter inflorescence, a pubescent rhachis, obvious floral bracts, and much smaller leaves and pseudobulbs. The flowers of *B. daloaense* resemble those of *B. rhizophora* but the former has larger flowers with a triangular lip. Vegetatively, *B. rhizophora* is quite distinct having more closely spaced pseudobulbs, narrowly oblong leaves and a shorter inflorescence.

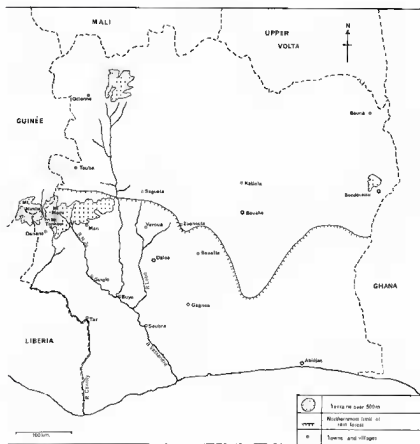
B. daloaense has been named after the town of Daloa, in the Côte d'Ivoire, where the type specimen flowered in cultivation in the collection of F. PEREZ-VERA.

Bulbophyllum irigaleæ Cribb & Perez-Vera, *sp. nov.* Pl. 3, p. 207.

B. distant Lindl. affine a quo labello subulato, exauriculato, callo quadripartito glabro et pilis tantum marginalibus ornato differt.

Herba epiphytica, glaberrima; rhizoma repens, teres, 2-3 mm diametro, e basi pseudobulborum radices numerosas, flexuosas, ramosas emittens. Pseudobulbi 0.5-1 cm distantes, ovato-elliptici, 3-4 angulati, ad substratum ± horizontaliter appressi, luteo-virides, monophylli. Folia anguste oblonga vel elliptica, erecto-patentia, petiolo brevi, apice subacuta, 8.5-10 cm longa, 1.5-1.7 cm lata, coriacea, obscure flavo-viridia. Inflorescentia e basi pseudobulbi exorta, simplex, 35-45 cm longa; pedunculus rigidus, curvus, 2.5-3 cm diametro, circiter 2/3 inflorescentiæ longitudine æquans; bracteæ 6-8, vaginatæ, adpressæ, valde discretæ, 15-17 mm longæ; rachis teres, 15-20 cm longa, 2 mm diametro, leviter flexuosa.

1. Herbarium of F. PEREZ-VERA, Daloa, Côte d'Ivoire.



Flores distichi, singulatim efflorescentes, luteo-virides, \pm purpureo-notati, internodia 7-12 mm longa; bractea erecta, rigida, lanceolata, acuta, margine involuta, 18.5 mm longa, 7.5 mm lata, brunneo-sanguinea. Sepala anguste lanceolata, acuminata, glabra, 12 mm longa, ad basin 2 mm lata, pars exterior sanguineo-brunnea, pars interior luteus maculis magnis purpureis marginibusque purpureis ornatus. Petala anguste lanceolata, acuminata, 4.5-5 mm longa, lutea, maculis purpureis ornata. Labellum lineari-lanceolatum, leviter flexuosum, basi latissimum, 13 mm longum, 1.5 mm latum, sanguineo-brunneum, granulosum, pars superior callo rectangulo, glabro, viride, proximaliter eburneo-luteo, cum zona centrali elliptica pallidioris notatus, labelli margines pilis purpureis multis, ad partem distalem 7-8 mm longis ad basin brevioribus obsiti. Columna 3.5 mm alta, exalata sed steldiis bene evolutis, 1.5 mm longis, filiformibus, prorsum incurvis praedita; anthera lutea; pollinia 2, ceracea.

TYPE : Perez-Vera 571, Zone Nord de la forêt de Taï, Côte d'Ivoire (holo-, K; iso-, Daloa).

OTHER SPECIMEN : Perez-Vera 248, Mont Momi, Côte d'Ivoire (Daloa).

In the Flora of West Tropical Africa, *B. irigaleæ* keys out near *B. distans* but it differs from that species in having only marginal hairs on the lip which also lacks any basal hyaline auricles. Further, *B. irigaleæ* has a rectangular glossy basal callus on its lip. *B. calamarium*, like *B. irigaleæ* has only marginal hairs on its lip but the former lacks a basal callus and its lip is quite fleshy.

B. irigaleæ has been named after Sra. Irigalé PEREZ-VERA, the wife of the collector of the type specimen.

***Bulbophyllum ivorense* Cribb & Perez-Vera, sp. nov. Pl. 4, p. 209.**

B. schimperano Kraenzl affine a quo sepalia latiora obtusa, petalis minutis, steldiis bilobatis, labello angustiore apice recurvato et floribus secundis facile distinguendum.

Herba epiphytica, glaberrima; rhizoma repens, 2-3 mm diametro, ad substratum firme affixum, radices cæspitosas, flexuosas, ramosas e basi pseudobulborum emittens. Pseudobulbi per spatia 0.5-1 cm separati, ad substratum = horizontaliter appressi, trigoni, superne semper plani, ovati vel conico-ovati, 1.5-2 cm longi, 1.2-1.5 cm lati, sulphurei vel flavo-virides, monophylli. Folia erecta, anguste oblonga, in petiolum brevissimum angustata, apice subacuta, 7-11 cm longa, 1-1.3 cm lata, coriacea, viridia sed supra atrovirentia et leviter canaliculata. Inflorescentia erecta, e basi pseudobulbi exorta, recta vel leviter curvata, cylindrica, quam folia longior, 10-30 cm longa; pedunculus 2-6 cm longus, teres, bracteæ vaginantibus 2-4 omnino velatus, bracteæ quam internodia paulo breviores, ovatae, scariosæ, acutæ vel obtusæ, 0.7-1.5 cm longæ; rachis teres, densiflora, 7-20 cm longa; bracteæ florales in spiram dispositæ, lanceolatae, 3-7 mm longæ, 1 mm, latae, acutæ. Flores quam bracteæ paulo longiores, nivei vel eburnei, = penduli, secundi, per spatia 1.5-3 mm distantes. Sepala lineari lanceolata, 5.5-6.5 mm longa, 1.2-1.7 mm lata, rigida, carnosâ, concava, eburnea. Petala orbiculata, minuta, papillata, 0.4 mm longa, alba. Labellum carnosum, rigidum, lineari-lanceolatum, 2-3 mm longum, basi leviter incrassatum ac dilatatum, apice recurvatum, glabrum, sulco longitudinali ornatum. Columna 2 mm alta; steldia valde evoluta, 0.8 mm longa, 0.4 mm lata, apice bifida; anthera sulphurea; pollinia 2, ceracea.

TYPE : *Perez-Vera 137*, Mont Tonkoui, Côte d'Ivoire (holo-, K; iso-, P, Daloa).
OTHER SPECIMEN : *P. Adames 588*, S. W. Lamco Hq. Camp, Liberia (K).

B. ivorense is easily recognised by its second, ivory coloured flowers and its distinctly hooked lip and this combination of characters does not occur in any other West African *Bulbophyllum* species. In F.W.T.A. it keys out near to *B. schimperanum* from which it is distinguished by its hooked lip and minute petals. Another West African species, *B. buntingii*, also possesses a hooked lip and second inflorescence but has smaller flowers and much larger stalked petals.

B. ivorense has also been collected on the Liberian side of Mont Nimba where it is said to be fairly common as an epiphyte in high forest.

***Bulbophyllum victoris* Cribb & Perez-Vera, sp. nov. Pl. 5, p. 211.**

B. hizophoro Lindl. et *B. falcipetalo* Lindl. affine a quibus petalis anguste obovatis, alis ad apicem columnæ angustatis, bracteis patentibus pseudobulbisque valde separatis et purpureo-notatis differt.

Herba epiphytica; rhizoma repens, teres, 2-3 mm diametro, radices numerosas,



Pl. 1. — Parts of inflorescence: *above left*, *Bulbophyllum ivorense* Cribb & Perez-Vera; *right*, *B. daloense* Cribb & Perez-Vera; *below left*, *B. victoris* Cribb & Perez-Vera; *right*, *B. irigalea* Cribb & Perez-Vera.

flexuosas, ramosas, e basi pseudobulborum emittens. Pseudobulbi per spatia 2.5-5 cm distantes, angusta elliptici vel conici, obscure 2-3-angulati, 1.5-3 cm longi, 5-8 mm lati, lutei = purpureo-notati, basi bracteis 1-2 scariosis partim obtecti, apice biphylli. Folia anguste oblongo-elliptica, apice rotundata, biloba, 2.5-4 cm longa, 7-11 mm lata, subtus prominenter costata, luteo-viridia vel saturate viridia. Inflorescentia e basi pseudobulbi exorta, erecta, ± leviter curvata, teres, quam folia longior, 9-11 cm longa; pedunculus 2-5 cm longus, basi bracteis sterilibus 3-4, obtusis, = imbricatis, 0.7-0.9 cm longis suffultus; bractex florales distichæ, triangulares, acutæ, membranacæ, 2-3 mm longæ, stramineæ, pedicellos involventes. Flores quam bractex longiores, per spatia 1.5-2 mm. distantes, lutei; sepala extus punctis purpureis ornata. Sepalum intermedium anguste lanceolatum, acutum, 5 mm longum, 0.9 mm latum, valde recurvatum; sepala lateralia reflexa, anguste oblanceolata, acuta, 3-3.2 mm longa, 0.3 mm lata. Petala reflexa, anguste oblanceolata, acuta, 3.7 mm longa, 2 mm lata. Labellum carnosum, oblongo-ellipticum, glabrum, leviter curvatum, obtusum, parte inferiore carinatum, 1.2 mm longum, 1 mm latum, luteum. Columna brevis, 1.8 mm alta; basi lata, alis latis marginata, stelidia brevissima; anthera lutea. Capsula ovoidea, 5.5 mm longa, 3.5 mm lata, perianthio persistenti coronata.

TYPE : *Perez-Vera 553*, Forêt de Yapo, Côte d'Ivoire (holo-, K; iso-, P, UCJ, Daloa).

Although closely allied to *B. rhizophoræ* and *B. falcipetalum*, *B. victoris* may be easily distinguished from both in the field by its distinctively purple spotted pseudobulbs, an inflorescence which is much longer than the leaves, narrowly oblanceolate petals and the tapering wings on the column. Furthermore, *B. victoris*, unlike *B. rhizophoræ*, has yellow flowers with purple spots on the outside of the sepals, widely spaced pseudobulbs and erect bracts.

B. victoris has been named in honour of the late Victor Samuel SUMMER-HAYES (1892-1974) whose work on African Orchids at Kew has provided such a stimulus to amateur and professional botanists alike.

NEW RECORDS OF ORCHIDACEÆ FOR THE CÔTE D'IVOIRE, WEST AFRICA

Acrangis calantha (Schltr.) Schltr.

Mt. Tonkoui, *P.V. 274* (DALOA); Soubré, *P.V. 274/B* (ABI, K, P, UCJ); Daloa à Zuénoula, *P.V. 274/C* (DALOA); Daloa à Man, riv. Lobo, *P.V. 629* (ABI, K, P, UCJ, DALOA).

Acrangis laurentii (De Wild.) Schltr.

Tiapleu, *P.V. 232* (K, DALOA).

Ancistrorhynchus capitatus (Lindl.) Summerh.

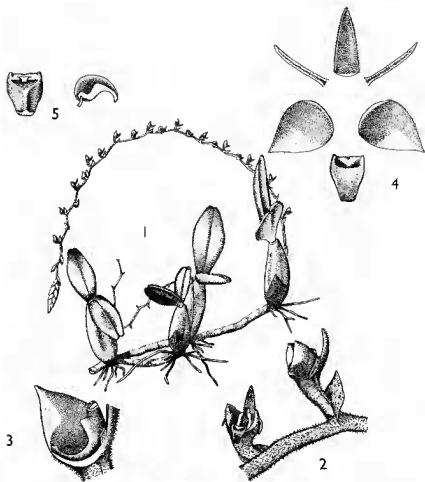
Danané, *Chevalier 21237* (P); Mt. Mafa, *A.A. 9033* (UCJ); Riv. Zo, *P.V. 193* (K, P, DALOA); Banco, *Huttel s.n.* (ABI).

Ancistrorhynchus recurvus Finet

Tiapleu, *A.A. 8825* (UCJ); entre Guezon et Buyo, *P.V. 538* (DALOA); Adiopodoumé, *P.V. 293* (K); Adiopodoumé, *A.A. 5611* (UCJ); Mt. Mafa, *A.A. 8904, 8902* (UCJ).

Angræcopsis elliptica Summerh.

Man à Danané, *P.V. 234* (K); Mt. Tonkoui, *P.V. 543* (ABI, K, P, UCJ, DALOA).



Pi. 2. — *Bulbophyllum daloense* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, part of inflorescence with two flowers $\times 4,5$; 3, part of a flower showing column and lateral sepal (side view) $\times 9$; 4, dissected flower, dorsal sepal uppermost $\times 7$; 5, lip (ventral and lateral views) $\times 7$.

***Bolusiella imbricata* (Rolfe) Schltr.**

Youkou, *Schell 1689* (P); Mt. Tonkoul, *P.V. 195* (DALOA); Danané, *P.V. 698* (K, UCJ, DALOA); N'Douci à Agboville, *P.V. 718* (ABI, K, P, UCJ, DALOA).

***Brachycorythis macrantha* (Lindl.) Summerh.**

Mt. Tonkoui, *A.A. 6266* (UCJ), *Hallé 981* (UCJ), *Nozeran s.n.* (P); Mt. Nimba, *A.A. 3696* (UCJ); Danané, *P.V. 702* (K, DALOA); Yéboué à Alangouakro, *Scaëtta 3055* (P).

***Brachycorythis paucifolia* Summerh.**

Mt. Nimba, *A.A. 3796* (ABI, UCJ).

Bulbophyllum calamarium Lindl.

Riv. Zo, *P.V.* 223 (DALOA); *P.V.* 187 (K, DALOA).

Bulbophyllum cocoinum Batem. ex Lindl.

Guessabo à Duékoué, *P.V.* 257 (DALOA); forêt de Zagné, *P.V.* 241 (K, P); Danané, *P.V.* 709 (K, UCJ, DALOA).

Bulbophyllum daloense Cribb & Per.-Vera.

Soubré à Buyo, *P.V.* 270 (K, P, DALOA); forêt de Taï, *P.V.* 270 B (ABI, K, P, UCJ, DALOA).

Bulbophyllum inflatum Rolfe

Mt. Nimba, *P.V.* 529 (ABI, K, P, DALOA); Mt. Momi, *A.A.* 9868 (K, UCJ), *A.A.* 9200, 9147 (K, UCJ).

Bulbophyllum irigaleæ Cribb et *P.V.*

Mt. Momi, *P.V.* 248 (DALOA).

Bulbophyllum ivorense Cribb & Per.-Vera.

Mt. Tonkouï, *P.V.* 137 (K, P, DALOA); forêt de Taï, *P.V.* 571 (K, DALOA).

Bulbophyllum lucifugum Summerh.

Tiapleu, *P.V.* 213 (K); Mt. Momi, *P.V.* 213/B (K, DALOA); Mt. Nimba, *P.V.* 567 (ABI, K, P, UCJ, DALOA); Mt. Tonkouï, *Hallé s.n.* (ABI).

Bulbophyllum lupulinum Lindl.

Tiapleu, *P.V.* 214 (K, DALOA); Mt. Momi, *P.V.* 214/B (DALOA); Danané à Mt. Nimba, *P.V.* 568 (ABI, UCJ); Mt. Tonkouï, *P.V.* 569 (P); Soubré, *A.A.* 10453 (UCJ).

Bulbophyllum magnibracteatum Summerh.

Forêt de San Pedro, *P.V.* 139 (DALOA); Tiapleu, *P.V.* 139/B (K); Oureyo, *P.V.* 139 C (DALOA); Buyo, *P.V.* 139 D (K, UCJ), *P.V.* 534 (DALOA); Balékro, *Nozeran s.n.* (P).

Bulbophyllum melanorrhachis (Rchb. f.) Rchb. f. ex De Wild.

Tiapleu, *A.A.* 9126, 9767 (K, UCJ); Tiapleu, *A.A.* 9780, 9786 (K, UCJ); *A.A.* 9820 (K, UCJ); route de Gagnoa à Sassandra, *P.V.* 222 (K, P, UCJ, DALOA); Mt. Mafa, *Bonardi 61* (P).

Bulbophyllum pipio Rchb. f.

Riv. La Lobo, *A.A.* 9797 (K, UCJ); Mt. Mafa, *Bonardi 63* (P); Brafoouédi, *P.V.* 260 (DALOA); Forêt de Yapo, *P.V.* 710, 720 (ABI, K, P, UCJ, DALOA).

Bulbophyllum porphyroglossum Kraenzl.

Tiapleu, *P.V.* 267 (DALOA); Brafoouédi, *P.V.* 267/B (ABI, K, P, UCJ, DALOA).

Bulbophyllum saltatorium Lindl.

Forêt de Banco, *P.V.* 665 (K, DALOA); forêt de Yapo, *P.V.* 711 (ABI, P, UCJ).

Bulbophyllum scariosum Summerh.

Mt. Tonkouï, *P.V.* 493 (ABI, K, P, UCJ, DALOA).

Bulbophyllum victoris Cribb & Per.-Vera.

Forêt de Yapo, *P.V.* 553 (K, P, UCJ, DALOA).



Pl. 3. — *Bulbophyllum irigaleae* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, part of inflorescence $\times 3$; 3, lip (dorsal view, hairs omitted) $\times 4$.

Bulbophyllum winkleri Schltr.

Tiapleu, *P.V.* 209 (DALOA); Mt. Nimba, *P.V.* 578 (K, P, UCJ, DALOA); Man, *P.V.* 607 (ABI); Riv. Zo, *P.V.* 676 (UCJ, DALOA).

Chamaeangis lanceolata Summerh.

Zagné, *P.V.* 275 (DALOA); Man à Danané, *P.V.* 275/B (K); Danané à Guinée, *P.V.* 677 (DALOA).

Chauliodon buntingii Summerh.

Brafouédi, *P.V.* 504 (K).

Cyrtorchis aschersonii (Kraenzl.) Schltr.

Oureyo, *P.V.* 277 (DALOA); Soubré, *P.V.* 277/B (DALOA); forêt de Gbotto, *P.V.* 552 (K); forêt de l'Abbé, *A.A.* 8893 (K, UCJ); Mt. Mafa, *A.A.* 8899 (UCJ); Lagako à Okromodou, *P.V.* 643 (DALOA).

Cyrtorchis hamata (Rolfe) Schltr.

Daloa, *P.V.* 244 (K, P), *P.V.* 269 (UCJ, DALOA); J. Bot. Univ. Abidjan, *A.A.* 9646 (UCJ); Daloa à Guiglo, *Bernardi* 8498 (P); Mt. Mafa, *Bonardi s.n.* (P); Guitri, *A.A. s.n.* (ABI).

Diaphananthe buxæ (Schltr.) Schltr.

Forêt de Dahiri, *A.A.* 9003 (UCJ); Mt. Mafa, *P.V.* 725 (K, DALOA).

Diaphananthe quintasii (Rolfe) Schltr.

Mt. Tonkouï, *P.V.* 236 (ABI), *P.V.* 696 (K, P, UCJ, DALOA).

Diaphananthe sarcorhynchoides J.B. Hall

Mt. Mafa, *A.A.* 9647 (UCJ), *P.V.* 728 (P); forêt d'Azaguié, *A.A.* 6023 (K, UCJ), *P.V.* 562 (K, DALOA).

Disperis thomensis Summerh.

Mt. Tonkouï, *P.V.* 521 (P, UCJ); *A.A.* 2696 (ABI, UCJ); *Cremers* 1091 (ABI, P); Mt. Nimba, *P.V.* 521/B (K, DALOA).

Eulophia buettneri (Kraenzl.) Summerh.

Daloa à Zuénoula, *P.V.* 207 (DALOA); Savane de Yuala, *P.V.* 597 (ABI, K, P, UCJ, DALOA); Lomo, *A.A.* 3083 (UCJ); Bouaflé, *A.A.* 7943 (UCJ).

Eulophia dilecta (Rchb. f.) Schltr.

M'Bahiakro, *A.A.* 1367 (UCJ); Seguéla, *A.A.* 2448 (UCJ).

Eulophia leonensis Rolfe

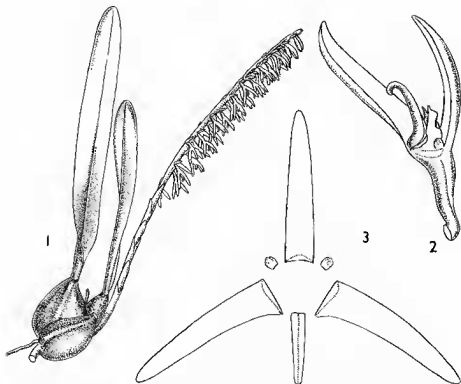
Odienné, *A.A.* 11767 (UCJ).

Eulophia monile Rchb. f.

Bondoukou, *A.A.* 8695 (K, UCJ).

Eulophia orthoplectra (Rchb. f.) Summerh.

Bianfa, *A.A.* 9092 (K, UCJ).



Pl. 4. — *Bulbophyllum ivorense* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, flower (lateral view) with one lateral sepal removed $\times 7$; 3, dissected flower, dorsal sepal uppermost $\times 7$.

***Eulophia sordida* Kraenzl.**

Daloa à Zuénoula, *P.V.* 558 (ABI, K, P, UCJ, DALOA); Séguéla, *A.A.* 11228 (UCJ).

***Eulophia warneckeana* Kraenzl.**

Savane de Mankono, *P.V.* 242 (ABI, K, P, UCJ); Vavoua, *P.V.* 580 (K, P, UCJ, DALOA); Séguéla à Touba, *P.V.* 581 (DALOA); Boundiali à Korhogo, *P.V.* 694 (K, DALOA); *Adja* 2034/B (UCJ); *A.A.* 5589 (UCJ); Zuénoula à Vavoua, *A.A.* 972/B (UCJ); *Ybert* 355 (ABI, UCJ); Séguéla, *A.A.* 9906 (ABI, UCJ); Zoakro, *A.A.* 11668 (UCJ); Ouossou, *Pobéguin* 139b (P); *Scaëtta* s.n. (P); Lamto, *Portères* 675 (P).

***Habenaria buettneriana* Kraenzl.**

Katiola, *A.A.* 3695 (UCJ); Danané, *P.V.* 699 (ABI, K, P, UCJ, DALOA).

***Habenaria cirrhata* (Lindl.) Rehb. f.**

Koumbi, *A.A.* 9052 (UCJ).

***Habenaria englerana* Kraenzl.**

Mt. Tonkouï, *A.A.* 2627 (UCJ).

Habenaria ichneumonea (Sw.) Lindl.

Mt. Tonkouï, *A.A.* 2630 (UCJ); Danané, *Nozeran s.n.* (P).

Liparis platyglossa Schltr.

Mt. Tonkouï, *P.V.* 520 (ABI, K, P, UCJ, DALOA), *A.A.* 2627 (UCJ).

Malaxis maclaudii (Finet) Summerh.

Mt. Tonkouï, *P.V.* 522 (ABI, K, P, UCJ, DALOA), *A.A.* 3693 (UCJ).

Malaxis katangensis Summerh.

Adiopodoumé, *P.V.* 652 (K).

Manniella gustavii Rchb. f.

Mt. Tonkouï, *P.V.* 501 (K); forêt de Sangouiné, *P.V.* 501/B (DALOA); Mt. Nimba, *P.V.* 501/C (UCJ).

Podangis dactyloceras (Rchb. f.) Schltr.

Gregbeu, *P.V.* 198 (UCJ); Guezon à Buyo, *P.V.* 537 (ABI, K, P, DALOA); proc. bassin de La Lobo, *A.A.* 9895 (UCJ); proc. bassin de La Lobo, *A.A.* 9886 (K, UCJ).

Polystachya affinis Lindl. var. *nana* J.B. Hall

Adiopodoumé, *P.V.* 152 (K, P, UCJ, DALOA); Tiapleu, *A.A.* 9228 (K, UCJ); forêt de Téké, *A.A.* 9308 (K, UCJ); forêt de Yapo, *P.V.* 722 (ABI, K, P, UCJ, DALOA).

Polystachya fractiflexa Summerh.

Lagako à Okromodou, *P.V.* 640 (K, P, UCJ, DALOA).

Polystachya modesta Rchb. f.

Mt. Tonkouï, *P.V.* 141 (DALOA), *P.V.* 141/B (K); Daloa à Zuénoula, *P.V.* 627 (DALOA).

Polystachya mukandaensis de Wild.

Bingerville, *P.V.* 531 (DALOA); Danané, *P.V.* 546 (K, P); Man à Touba, *P.V.* 592 (UCJ, DALOA); forêt de Banco, *P.V.* 707 (ABI).

Polystachya paniculata (Sw.) Rolfe

Forêt de San Pedro, *P.V.* 157 (DALOA); Tiapleu, *P.V.* 157/B (K, DALOA); proc. region Hiré, *A.A.* 9781 (K, UCJ).

Polystachya parva Summerh.

Mt. Tonkouï, *P.V.* 679 (ABI, K, P, UCJ, DALOA).

Polystachya ramulosa Lindl.

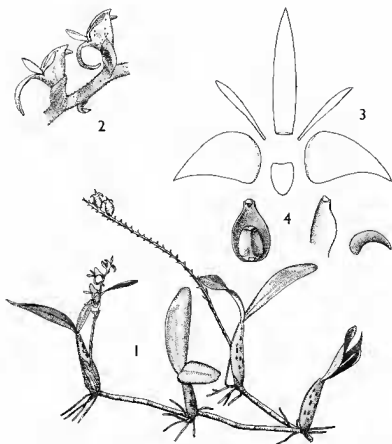
Mt. Mafa, *Bonardi* 113 (P).

Polystachya seticaulis Rendle

Forêt de Banco, *A.A.* 10027 (K, UCJ); forêt de M'Zida, *A.A.* 3136 (UCJ); forêt de Yapo, *P.V.* 719 (K, DALOA).

Polystachya victoriæ Kraenzl.

Brafouédi, *P.V.* 512 (ABI, K, UCJ, DALOA).



Pl. 5. — *Bulbophyllum victoris* Cribb & Perez-Vera : 1, habit of plant $\times 2/3$; 2, part of inflorescence $\times 3$; 3, dissected flower, dorsal sepal uppermost $\times 7$; 4, column and lip (ventral and lateral views) $\times 7$.

Rangaeris longicaudata (Rolfe) Summerh.

Oureyo, *P.V.* 146 (K, UCJ, DALOA); Guezon, *P.V.* 533 (P).

Tridactyle armeniaca (Lindl.) Schltr.

Mt. Momi, *P.V.* 215 (DALOA); Danané à Guinée, *P.V.* 576 (ABI, K, P, UCJ, DALOA);

Mt. Tonkoui, *A.A.* 4147 (UCJ).

Tridactyle crassifolia Summerh.

Forêt de Buyo, *P.V.* 263 (ABI, K, P, UCJ, DALOA).

P.V. = F. PEREZ-VERA; A.A. = L. AKÉ-ASSI; DALOA = Perez-Vera's herbarium, Daloa, Côte d'Ivoire.

CHECK LIST OF THE ORCHIDS OF THE CÔTE D'IVOIRE

(based on SUMMERHAYES (1968) and the new records given in this paper unless otherwise indicated).

- Swartzkoppfia pumila* (Lindl.) Schltr. » *rufina* (Ridl.) Rchb. f.
Brachycorythis macrantha (Lindl.) Summerh. » *guineensis* Lindl.
 » *epiphytica* Schltr.
» tenuior Rchb. f. *Ansellia africana* Lindl.
» paucifolia Summerh. *Polystachya paniculata* (Sw.) Rolfe
» ovata Lindl. subsp. *schweinfurthii* » *fractiflexa* Summerh.
 (Rchb. f.) Summerh. » *laxiflora* Lindl.
» pubescens Harv. » *rhodoptera* Rchb. f.
Habenaria filicornis Lindl. » *dalzielii* Summerh.
» buntingii Rendle » *pseudodisa* Kraenzl.
» macrandra Lindl. » *pobeguinii* (Finet) Rolfe
» leonensis Dur. & Schinz » *reflexa* Lindl.
» zambesina Rchb. f. » *victoriae* Kraenzl.
» procera (Sw.) Lindl. » *seticaulis* Rendle
» gabonensis Rchb. f. » *adansoniae* Rchb. f.
» englerana Kraenzl. » *polychaete* Kraenzl.
» barrina Ridl. » *ramulosa* Lindl.
» bœttnerana Kraenzl. » *puberula* Lindl.
» genuflexa Rendle » *odorata* Lindl. var. *odorata*
» ichneumonea (Sw.) Lindl. » *tessellata* Lindl.
» cirrhata (Lindl.) Rchb. f. » *mukandaensis* de Wild.
» cornuta Lindl. (3)¹ » *modesta* Rchb. f.
» occidentalis (Lindl.) Summerh. » *golungensis* Rchb. f.
Platycoryne paludosa (Lindl.) Rolfe » *dobichophylla* Schltr. (3)
Disa welwitschii Rchb. f. » *subulata* Finet
Disperis thomensis Summerh. » *leonensis* Rchb. f.
Vanilla africana Lindl. » *parva* Summerh.
 » *crenulata* Rolfe » *affinis* Lindl.
 » *imperialis* Kraenzl. » *affinis* Lindl. var. *nana* J.B. Hall (2)
Diceratosteles gabonensis Summerh. » *obanensis* Rendle
Nervitia reniformis Schltr. (1) » *microbambusae* De Wild.
 » *foersterbergiana* Schltr. (1) » *crassifolia* Schltr. (4)
 » *adolphi* Schltr. var. *seposita* N. » *mystacioides* De Wild.
 Hallé & J. Toilliez (1) » *galeata* (Sw.) Rchb. f.
 » *katschyi* (Rchb. f.) Schltr. (1) » *tenuissima* Kraenzl.
 » *umbrosa* (Rchb. f.) Schltr. (1) » *inconspicua* Rendle
 » *toilliezae* N. Hallé (1) *Ancistrochilus rothschildianus* O'Brien
Auxopus kamerunensis Schltr. *Budbophyllum flavidum* Lindl.
Mamiella gustavii Rchb. f. » *cocoinum* Bailem. ex Lindl.
Platylepis glandulosa (Lindl.) Rchb. f. » *josephii* (Kuntze) Summerh.
Zeuxine elongata Rolfe » *nigrisatum* Rendle
Heteria heterosepala (Rchb. f.) Summerh. » *pipio* Rchb. f.
 » *stammleri* (Schltr.) Summerh. » *buntingii* Rendle
 » *occidentalis* Summerh. » *winkleri* Schltr.
Corymborkis corymbosa Thou. » *porphyroglossum* Kraenzl.
Malaxis maclaudii (Finet) Summerh. » *inflatum* Rolfe
 » *chevalieri* Summerh. » *cochleatum* Lindl.
 » *katangensis* Summerh. » *saltatorium* Lindl.
Liparis tridens Kraenzl. » *distans* Lindl.
 » *platyglossa* Schltr. » *calamarium* Lindl.

1, I, N. HALLÉ & J. TOILLIEZ (1971); 2, J. B. HALL (1974); 3, L. AKÉ ASSI (1963); 4, J. GUILLAUMET (1967).

- » *phaeopogon* Schltr.
 » *schinzianum* Kraenzl. (3)
 » *barbigerum* Lindl.
 » *fuscum* Lindl.
 » *oreonastes* Rchb. f.
 » *scariosum* Summerh.
Bulbophyllum bifarium Hook. f.
 » *nigericum* Summerh.
 » *lupulinum* Lindl.
 » *falsipetalum* Lindl.
 » *rhizophoræ* Lindl.
 » *congolatum* Schltr.
 » *tentaculigerum* Rchb. f.
 » *velutinum* (Lindl.) Rchb. f.
 » *melanorrhachis* (Rchb. f.) Rchb. f.
 ex De Wild.
 » *falcatum* (Lindl.) Rchb. f.
 » *purpureorrhachis* (De Wild.) Schltr.
 » *bufo* (Lindl.) Rchb. f.
 » *calyptratam* Kraenzl.
 » *lucifugum* Summerh.
 » *oburnum* (Rchb. f.) Rchb. f.
 » *maximum* (Lindl.) Rchb. f.
 » *kamerunense* Schltr. (3)
 » *magnumbracteatum* Summerh.
 » *imbricatum* Lindl.
 » *linderi* Summerh.
 » *daloaense* Cribb & Perez-Vera
 » *irrigaleæ* Cribb & Perez-Vera
 » *ivorensis* Cribb & Perez-Vera
 » *victoris* Cribb & Perez-Vera
Genyorchis pumila (Sw.) Schltr.
Eulophidium maculatum (Lindl.) Pütz.
 » *saunderianum* (Rchb. f.) Summerh.
Eulophia guineensis Lindl.
 » *gracilis* Lindl.
 » *eglosua* (Rchb. f.) Rchb. f.
 » *shupangæ* (Rchb. f.) Kraenzl.
 » *warneckiana* Kraenzl.
 » *monte* Rchb. f.
 » *brevipetala* Rolfe
 » *sordida* Kraenzl.
 » *leonensis* Rolfe
 » *aha* (Linn.) Fawcett & Rendle
 » *flavopurpurea* (Rchb. f.) Rolfe
 » *cristata* (Sw.) Steud.
 » *caricifolia* (Rchb. f.) Summerh.
 » *angolensis* (Rchb. f.) Summerh.
 » *cucullata* (Sw.) Steud.
 » *dilecta* (Rchb. f.) Schltr.
 » *buettneri* (Kraenzl.) Summerh.
 » *horsfallii* (Batem.) Summerh.
 » *barteri* Summerh.
 » *juncifolia* Summerh.
 » *orthoplectra* (Rchb. f.) Summerh.
Graphorkis lurida (Sw.) Kuntze
Podangis dactyloceras (Rchb. f.) Schltr.
Calyptrorchilum emarginatum (Sw.) Schltr.
 » *christyanum* (Rchb. f.) Summerh.
Angracum distichum Lindl.
 » *podochloides* Schltr.
 » *subulatum* Lindl.
 » *pyriforme* Summerh.
 » *chevalieri* Summerh.
 » *birmanense* Rolfe
Listrostachys pertusa (Lindl.) Rchb. f.
Microcalea cæspitosa (Rolfe) Summerh.
 » *dahomeensis* (Finet) Summerh.
Encheiridion macrorrhynchium (Schltr.)
 Summerh.
Chauliodon buntingii Summerh.
Diaphanthe pellucida (Lindl.) Schltr.
 » *buezæ* (Schltr.) Schltr.
 » *quintasii* (Rolfe) Schltr.
 » *bidens* (Sw.) Schltr.
 » *curvata* (Rolfe) Summerh.
 » *rutila* (Rchb. f.) Summerh.
 » *laxiflora* (Summerh.) Summerh.
 » *sarcorrhynchoides* J. B. Hall (2)
Bolusella stridifolia (Rolfe) Schltr.
 » *imbricata* (Rolfe) Schltr.
 » *batesii* (Rolfe) Schltr.
 » *talbotii* (Rendle) Summerh.
Chamaeangis lanceolata Summerh.
 » *odoratissima* (Rchb. f.) Schltr.
 » *vesicata* (Lindl.) Schltr.
Plectrelminthus caudatus (Lindl.) Summerh.
Aerangis biloba (Lindl.) Schltr.
 » *calantha* (Schltr.) Schltr.
 » *laurentii* (De Wild.) Schltr.
Rangaeris muscicola (Rchb. f.) Summerh.
 (3)
 » *rhypsalisocia* (Rchb. f.) Summerh.
 » *longicaudata* (Rolfe) Summerh.
 » *brachyceras* (Summerh.) Summerh.
 (3)
Cyrtorchis ringens (Rchb. f.) Summerh.
 » *monteiroæ* (Rchb. f.) Schltr. (3)
 » *arcuata* (Lindl.) Schltr. subsp. *whytei*
 (Rolfe) Summerh.
 » *arcuata* (Lindl.) Schltr. subsp. *varak-*
bis Summerh.
 » *hamata* (Rolfe) Schltr.
 » *aschersonii* (Kraenzl.) Schltr.
 » *brownii* (Rolfe) Schltr.
Solenangis scandens (Rolfe) Schltr.
 » *clavata* (Rolfe) Schltr.
Dinklageella iberica Mansf.
Eurychone rothschildiana (O'Brien) Schltr.
Ancistrorhynchus clandestinus (Lindl.)
 Schltr.
 » *recurvus* Finet
 » *capitatus* (Lindl.) Summerh.
Ancistrorhynchus cephalotes (Rchb. f.)
 Summerh.
 » *straussii* (Schltr.) Schltr.

<i>Angræcopsis elliptica</i> Summerh.	<i>Tridactyle oblongifolia</i> Summerh.
<i>Eggelingia clavata</i> Summerh.	» <i>tridentata</i> (Harv.) Schltr.
<i>Tridactyle anthomaniaca</i> (Rchb. f.) Summerh.	» <i>armeniaca</i> (Lindl.) Schltr.
» <i>crassifolia</i> Summerh.	» <i>tridactylites</i> (Rolfe) Schltr.
	» <i>bicaudata</i> (Lindl.) Schltr.

REFERENCES

- AKÉ ASSI L. — Contribution à l'étude floristique de la Côte d'Ivoire et des territoires limitrophes. Paris (1963).
- GUILLAUMET J.-L. — Recherches sur la végétation et la flore de la région du Bas-Cavally (Côte d'Ivoire). Paris (1967).
- HALL J. B. — African Orchids: XXIV, *Kew Bulletin* **29** (2) : 427-429 (1974).
- HALLÉ N. & TOILLIEZ J. — Le genre *Nervilia* (*Orchidaceae*) en Côte d'Ivoire, *Adansonia* **II** (3) : 443-461 (1971).
- SUMMERHAYES V. S. — *Orchidaceae* in *Flora of West Tropical Africa*, ed. 2, **3** (1) : 180-276 (1968).

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